

IN THE SPECIFICATION:

Add a new paragraph at page 1, after the title and insert new section headings and subheadings as follows:

CROSS REFERENCE TO RELATED APPLICATION

This application is a national phase application based on PCT/IT2003/000868, filed December 31, 2003.

BACKGROUND OF THE INVENTION

Field of the Invention

Page 1, before line 6, add the following new subheading:

Description of the Related Art

Page 4, before line 5, add the following new section heading:

SUMMARY OF THE INVENTION

Page 5, lines 2-13, delete the two (2) paragraphs starting with "A polarization control method as defined . . ." and ending with ". . . claims 25 to 34 relate to preferred embodiments of the system." in their entirety and substitute new paragraphs therefor as follows:

In accordance with the present invention, there is provided an optical signal polarisation control method, including the steps of:

feeding an optical input signal (Sin) to a first polarisation transformation block (PC1) for providing a corresponding first optical output signal (S1);

feeding the first optical output signal to a second polarisation transformation block (PC2) for providing a corresponding second output signal (Sou);

providing to said blocks regulating signals variables within limited operating intervals and such as to permit said blocks to assume the following alternative configurations:

at least one configuration (A;D) wherein one block between the first and the second blocks assumes an active state in which it performs a polarisation transformation that is variable over time, and the other block assumes an inactive state in which it carries out a polarisation transformation that is substantially constant over time, or

at least one additional configuration (B;C) wherein one block between the first and the second blocks is in the active state and the other block is in a reset state in order to carry out a rewind operation wherein at least one of the corresponding regulating signals is made to assume a value within the corresponding limited interval.

In a preferred embodiment, the at least one configuration includes the following alternative configurations: a first configuration (A) wherein the first block assumes the active state and the second block assumes the inactive state, and a second configuration (D) wherein the first block assumes the inactive state and the second block assumes the active state; and said at least one additional configuration includes the following alternative configurations: a second configuration (B) wherein the second block is in the active state and the first block in the reset state, and a third configuration (C) wherein the first block (PC1) assumes the active state and the second block (PC2) assumes the reset state.

The method may further include reaching a limit by at least one regulating signal of one of said blocks; and

generating at least one regulating-reset signal for bringing one of said blocks, for which the reaching of the limit value has occurred, into the reset state, which may also include the steps of:

completing said rewind operation for one of said blocks which has assumed the reset state; and

generating at least one regulating-deactivation signal in order to bring one of said blocks from the reset state into the inactive state.

In accordance with the present invention, there is also provided a polarisation controller device (50), which includes:

a first adjustable block (PC1) for transforming the polarisation of an optical input signal (Sin) and providing a corresponding first optical output signal (S1);

a second adjustable block (PC2) distinct from the first block (PC1), for receiving the first output signal as input and transforming its polarisation, thus providing a corresponding second optical output signal (Sou); and

a control stage (CB), for providing to said blocks regulating signals varying between limited operating intervals, adapted to bringing the device into the following alternative configurations:

at least one configuration (A;D) wherein one block between said first and second blocks, assumes an active state in which it performs a polarisation transformation that is variable over time, and the other block assumes an inactive state in which it carries out a polarisation transformation, that is substantially constant over time, or

at least one additional configuration (B;C), wherein one block between said first and second blocks is in the active state and the other block is in a reset state wherein at

least one of the corresponding regulating signals is induced by the control stage to assume a value within said limited interval.

There is also provided, in accordance with the present invention, a controlled polarisation system (100) which includes:

the polarisation controller device (50) of this invention,

a polarisation sensitive device (PSD) provided with:

an optical input port (3) for receiving the second output signal (Sou);

an optical output port (5) for making available an output signal (Sopt)

having a polarisation state that is dependent on said second output signal; and

an optical feedback port (4) for making available an optical feedback signal (Sofb) having a polarisation state which is dependent on said second output signal.

The controlled polarisation system (100) may further include a first optical coupler, including corresponding input such as to receive said selected part and send a portion of it over a first output optically coupled to the optical feedback port (4), and a corresponding second output optically coupled to the optical output port (5).

Page 5, before line 14, add the following new section heading:

BRIEF DESCRIPTION OF THE DRAWINGS

Page 6, before line 11, add the following new section heading:

DETAILED DESCRIPTION OF THE INVENTION